

# ***Leveraging EDW in C-5 RERP***

## **Discussion Document**

***Bobby Steed  
Supply Chain Manager, C-5M  
Program***

# C-5 Reliability Enhancement and Re-engining Program (RERP)



## Reliability Enhancements

- 36 % of MCR Benefit
- 53 RE Items
- Distributed as Shown

## Re-Engining

- 64 % of MCR Benefit
- 15 RE Items

## Structural Inspection/Repair

- 0 % of MCR Benefit
- 8 Items

## Electrical System

- 1.8 % of MCR Benefit
- 2 RE Items

## Airframe Mods

- 4.6 % of MCR Benefit
- 7 RE Items

## Avionics

- 5.2 % of MCR Benefit
- 4 RE Items

## Landing Gear

- 0.9 % of MCR Benefit
- 8 RE Items

## Fuel System

- 5.7 % of MCR Benefit
- 5 RE Items

## Hydraulic System

- 1.2 % of MCR Benefit
- 3 RE Items

## Environmental/Pneumatic

- 6.7 % of MCR Benefit
- 10 RE Items

## Flight Controls

- 9.9 % of MCR Benefit
- 14 RE Items

**Overall RTOC Savings: \$8.6B (CY00\$), O&S savings: \$16.0B (**

# Working within C-5M to create a logistics “web” -with technology as the enabler



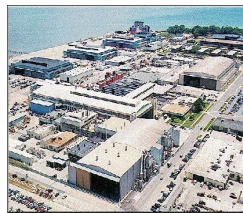
## External Suppliers

- Contract repair
- ALC repair
- OEMs



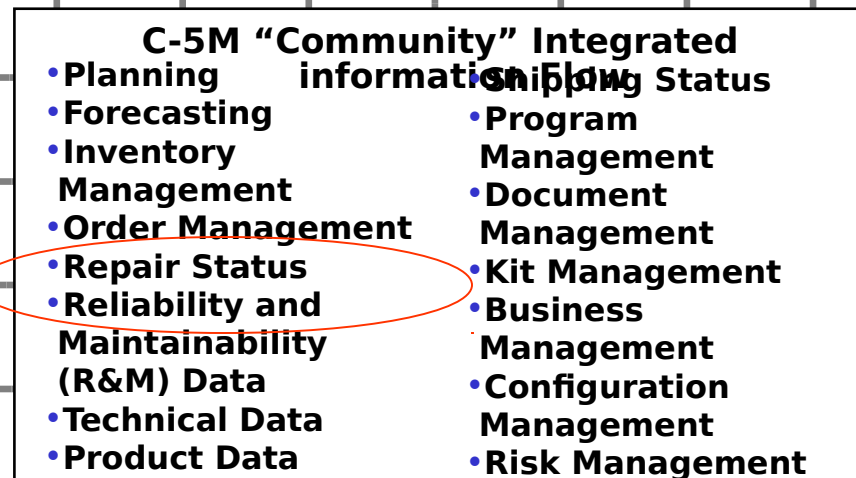
## Worldwide customers

- Main Operating Bases
- En Routes
- Forward operating locations



## OEM

- Inventory Management
- Material Planning
- Procurement

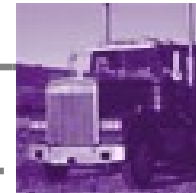


Management

- Workflow Management
- System Engineering

Warranty

- Procurement
- Program



## Transportation Providers

- Commercial
- Military

## Distributors

- Base Supply
- DLA
- LMALC
- 3PL

## Planning and Policy

- Pentagon
- HQ AMC / LG / DO / TACO
- C-5 SPO
- C-5 SPD





# Challenge: integrate the C-5 “community” of customers and suppliers



## Suppliers



**Information Sharing:**  
**Order & Transaction Visibility**  
 • Purchase Orders (POs)  
 • Repair  
 • MICAP  
 • Ship Status  
**Production/Inventory Levels**

**Roles**

MICAP  
 Spares  
 Production  
 Source of Repair (SOR)

## LM Aero

### Production



### Aftermarket Support

**Roles**

Item/Data Management  
 Sustaining Support  
 Demand Planning  
 Order Management  
 Production

## Air Force

### Home Stations / Main Operating Bases (MOBs)

Travis



Lackland

Westover

Altus

Stewart

Dover



### En Routes (ERs)

PACIFIC  
THEATRE

EUROPEAN  
THEATRE

### Forward Operating Bases (FOBs)

FOB

FOB

FOB

FOB

FOB

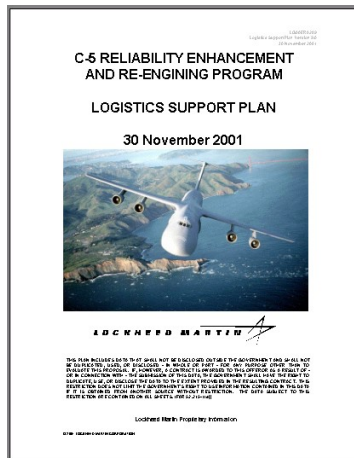
**Roles**

Fleet Management  
 Logistics Support  
 Maintenance Data Collection  
 Base Supply  
 Regional Supply Squadron

# C-5 RERP Logistics Support Plan



- Initial draft completed 14 Jun 00
- Coordinated within LM Aero and reviewed with Air Force for the last three years



## LSP Sections

- 1 - Introduction
- 2 - Understanding of AMC's Requirements
- 3 - Program Organization and Execution
- 4 - Strategic Sourcing
- 5 - CONOPS
- 6 - IT Strategy
- 7 - Supply Support Assessment

## Appendices

- Key position roles and responsibilities
- Base support requirements
- Data access requirements
- Risk mitigation strategy
- Training plan
- Tech Order Publishing Plan
- Provisioning model
- Performance measurements
- Total Ownership Cost (TOC)

***Leverages industry “best practices” and “lessons learned” from other CLS-type efforts***

# Meeting C-5M technology requirements



## **Challenge**

Air Force Legacy systems are OLTP (On-Line Transactional Processing) tools

- Read/Write capability
- Designed for reporting, not analysis

## **Solution**

Need for OLAP (On-Line Analytical Processing) capability

- Read only
- Optimize data in legacy systems for analysis



# C-5 Tiger Team also identified critical IT issues addressed in the LSP

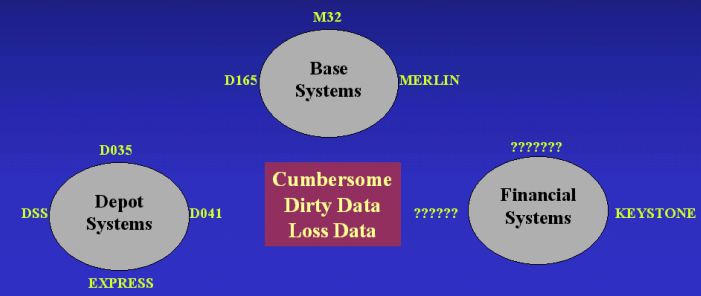
## Management Information System Multiple Sources Of IM Information

- IMs use Multiple Legacy Systems to Acquire Needed Data
- Cindy's Story

MIS Does Not Provide Real-time Information to Manage the Supply Chain

## Management Information System

- SCM Has Limited Ability to Acquire Basic Statistical Data on Weapon System Status
- Current Environment Requires Use of a Multitude of Legacy Systems



## Management Information System Systems Interfaces

- System Interfaces Lead to Inaccurate Data and Delay Products
  - Inconsistency of Data and Gaps
  - No Accountability for Successful/Accurate Products
  - Numerous Inaccuracies (Garbage In, Garbage Out)
- Multiple Number of Systems With Data in Various Formats
  - Multiple Workarounds (Wrapper Tools)
  - Drives Training Requirements

Interface of Numerous, Antiquated Systems Leads to “Dirty Data”, Inefficiency, and Lack of Weapon System Visibility

## Management Information System RECOMMENDATIONS

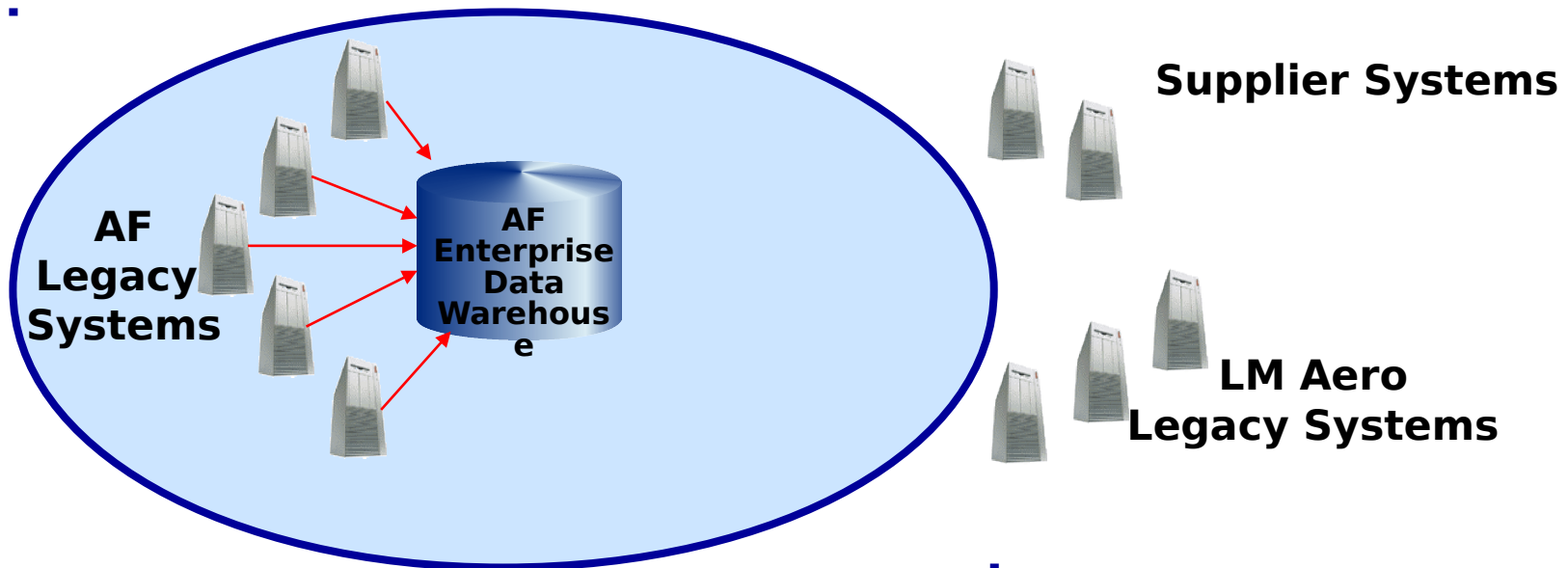
- Expedite the Streamlining of AFMC Legacy Systems and Tech Refresh
- Create a Central Data Warehouse
- Develop a Single SCM System versus Wholesale/Retail
- Develop Decision Support Tool to Isolate/identify Items Needing Exception Management

# Leveraging EDW for C-5M



## AF Managed Data

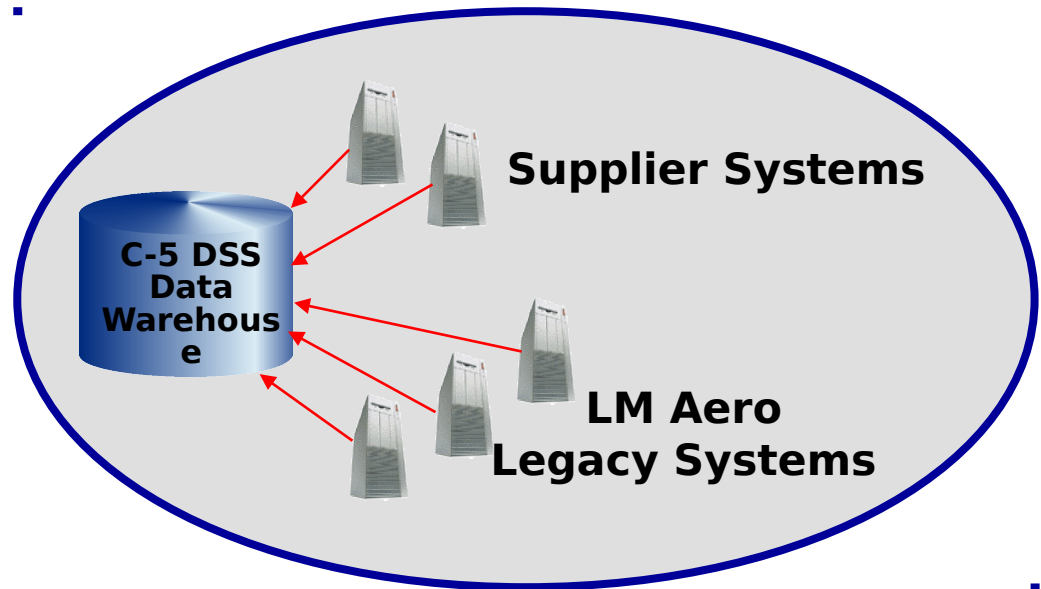
## LM Aero Managed Data



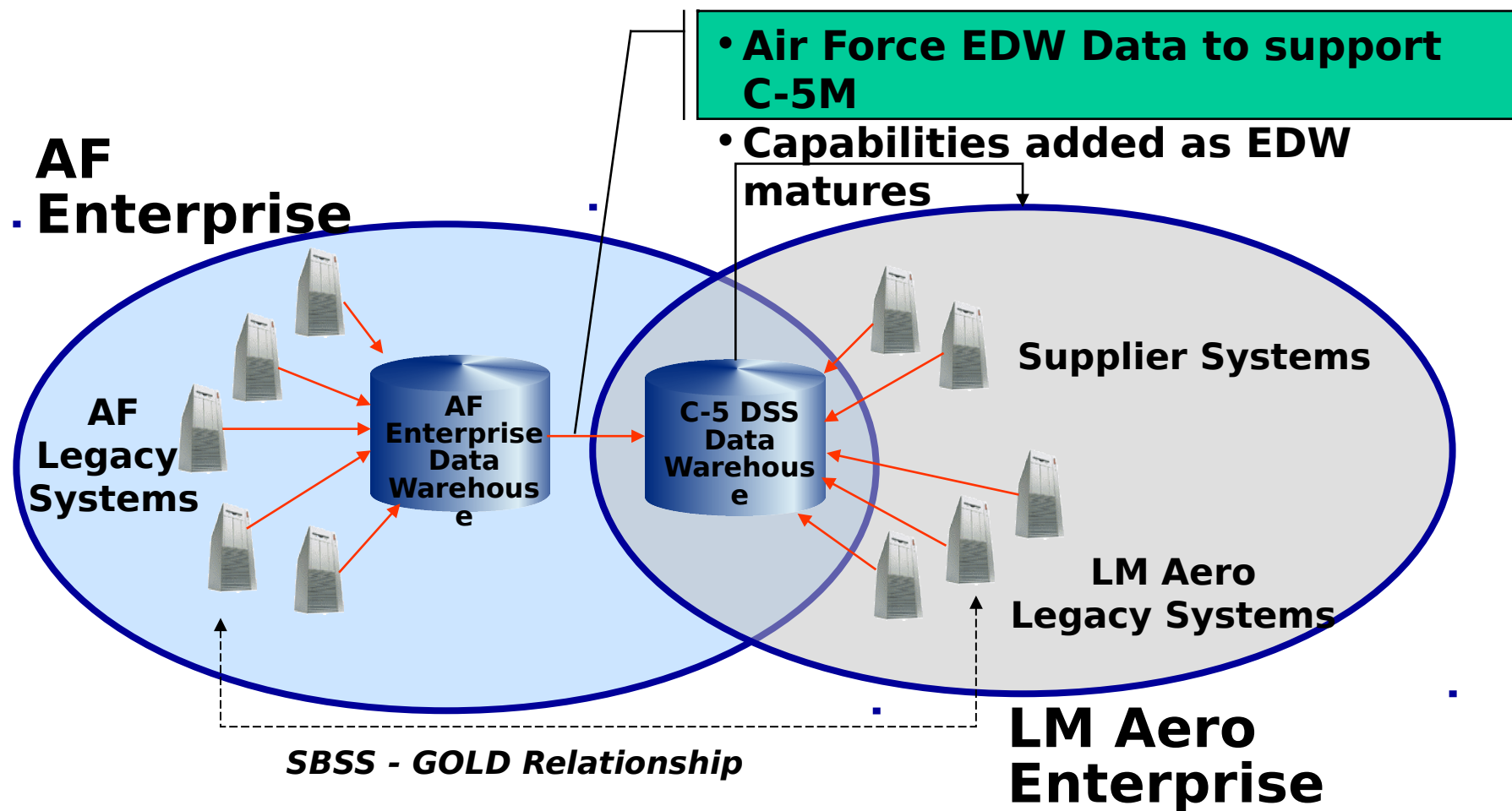




## LM Aero Managed Data



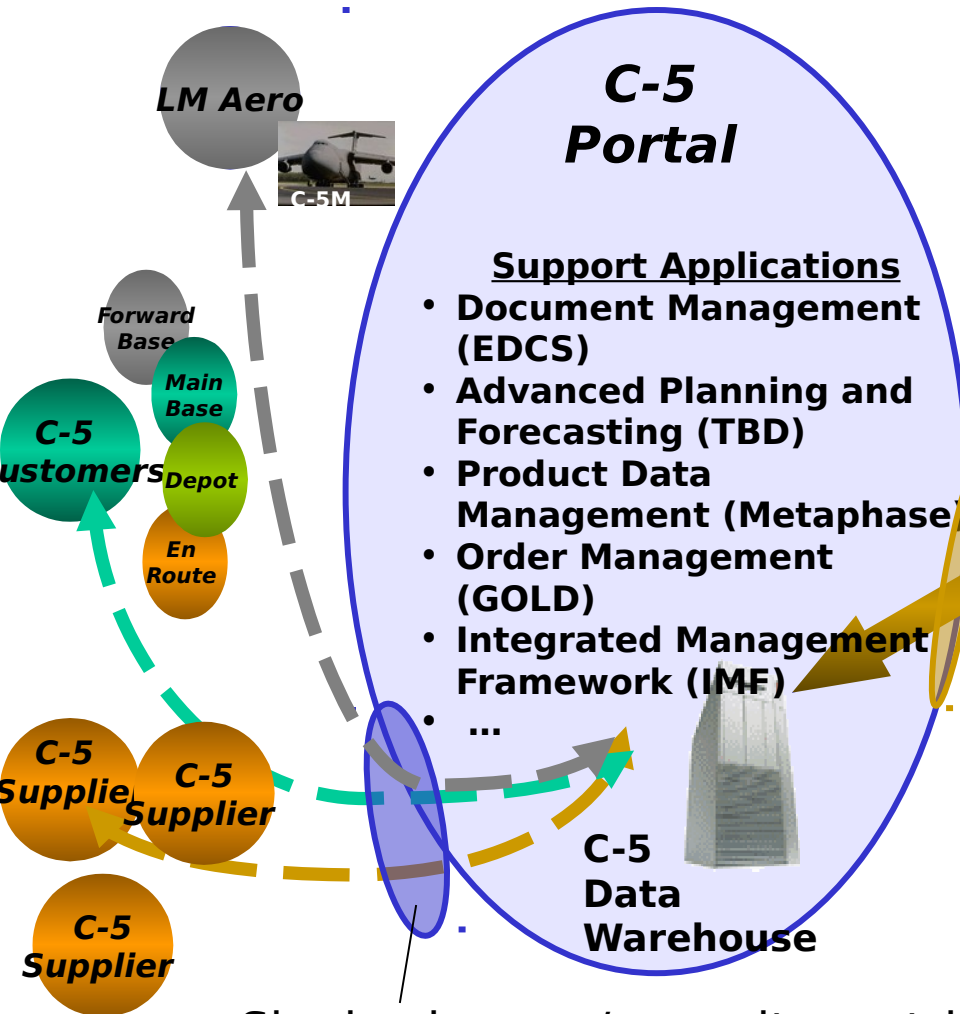
# EDW - LM Aero data warehouse inter-relationships



# C-5 data warehouse a part of the overall IT strategy

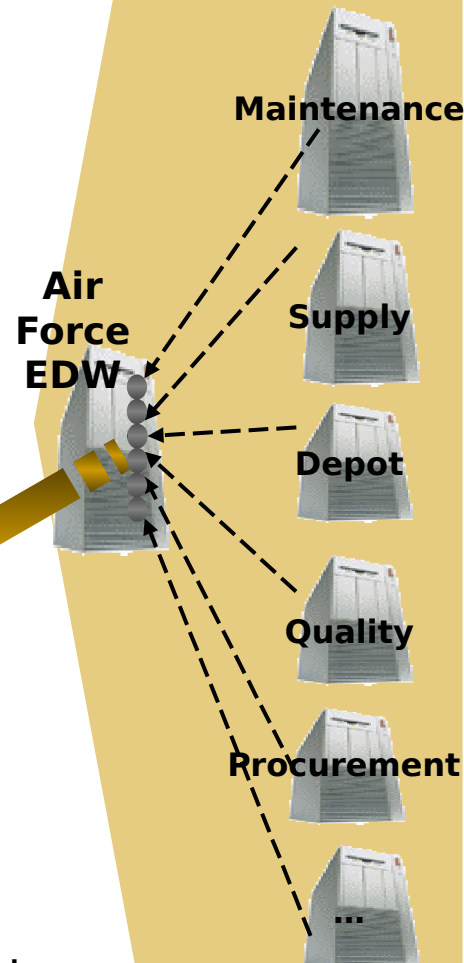


## C-5M support “community”

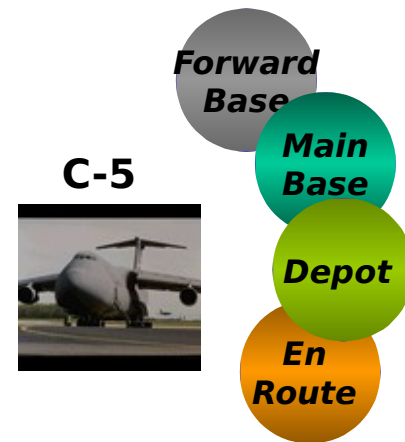


Single sign-on / security restriction

## Air Force Legacy Systems



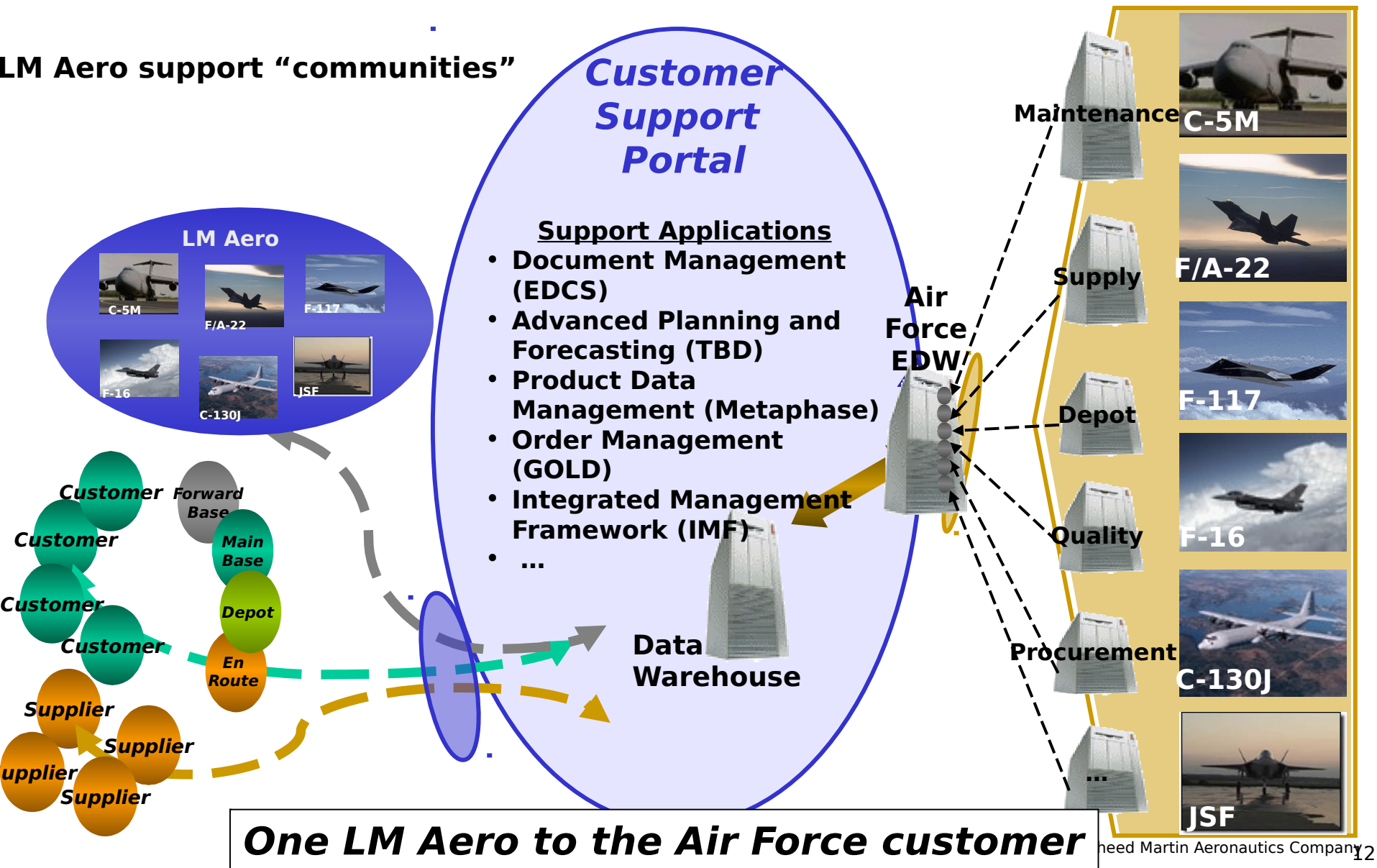
## Air Force environment



# Potential integration of a common approach across LM Aero "communities"



LM Aero support "communities"



# ***Integrating the supply web through common IT approach***



**Support “community”**

LM Aero

LM Aero

Maintenance

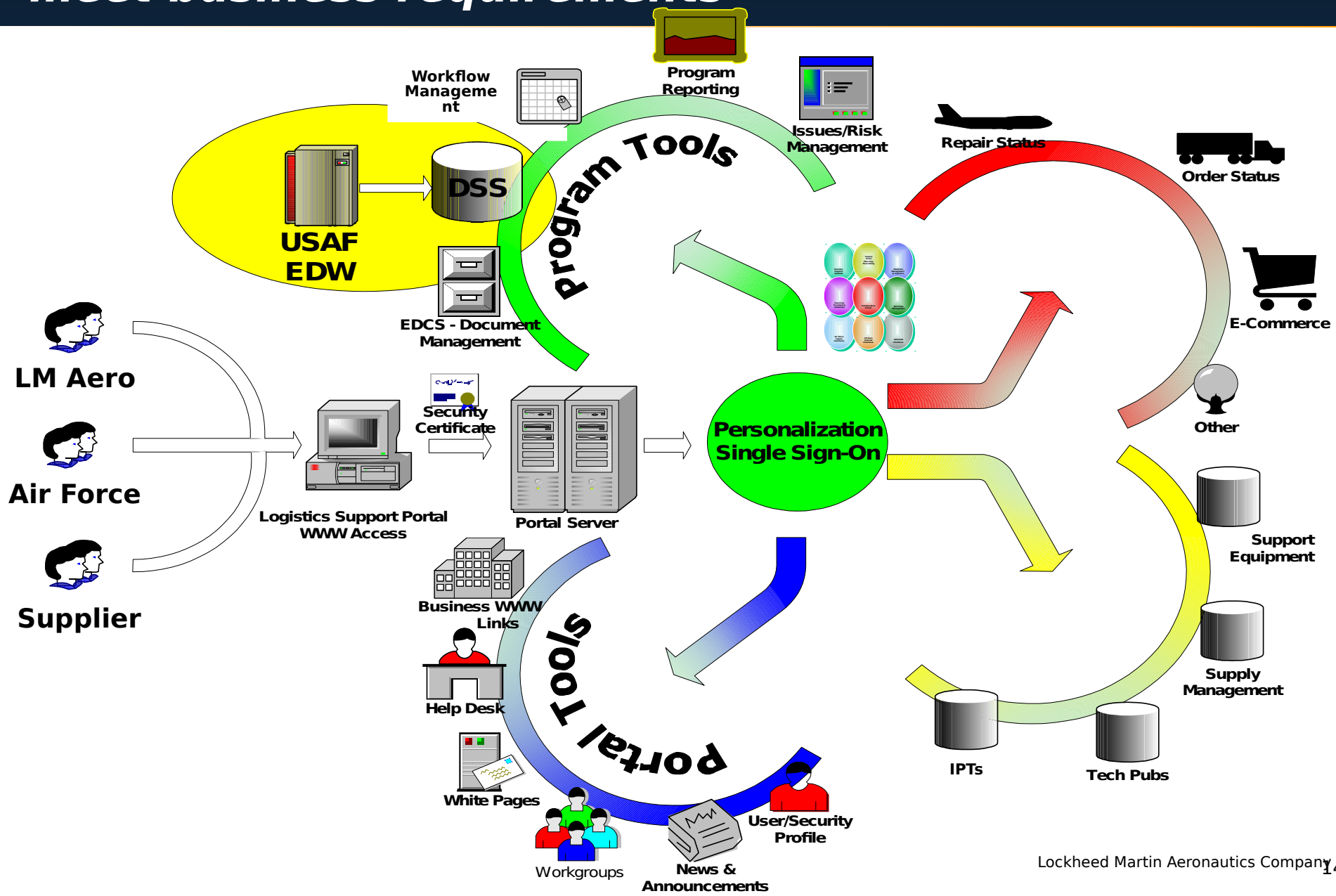
C-5M

***Strategic suppliers and  
customers  
across LM Aero aircraft  
programs  
can use a  
common suite of applications  
and standardized processes  
to manage, collaborate  
and share information***

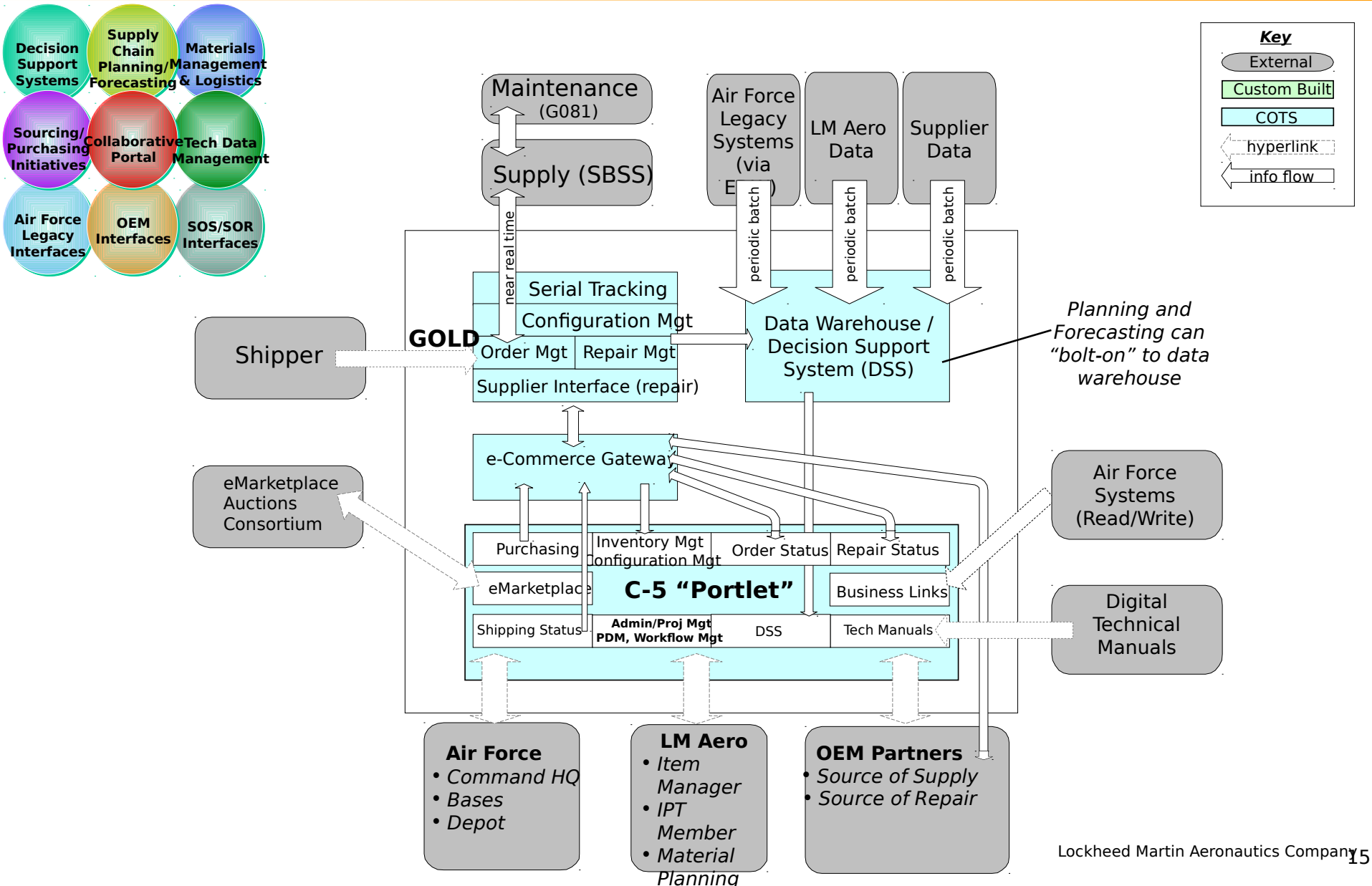
***One LM Aero to the Air Force customer***



# Leveraging portal capabilities to meet business requirements



# Data accessibility via an integrated approach



# ***Life Cycle Supplier Management (LCSM) support in the C-5 program***



- **Assessing suppliers' ability to meet LSP CONOPS**
  - **Including suppliers in the LCSM strategy development**
    - *Supplier conferences and feedback*
    - *Issues tracking and resolution*
    - *Stakeholder buy-in*
  - **Developing supplier strategies to meet ORD requirements**
    - *Collaborative planning and forecasting with suppliers*
- Fundamental changes in supplier partnering - technology is key***



- Original goal: improve C-5 reliability, maintainability and availability
- We've expanded our vision and are creating an improved way of doing business
  - *Shared data environment*
  - *Partnerships with suppliers*
  - *Improved Air Force relationships*
- Technology is the enabler for improved customer support
- EDW data access is only a portion of our strategy
- We're in it for the long haul

# ***Briefing Points of Contact***



Bobby Steed  
C-5M Supply Chain Manager, LM Aero  
770.494.5372 (work)  
bob.k.steed@lmco.com

Phil Napier  
Senior Manager, BearingPoint  
937.361.5366 (mobile)  
pnapier@bearingpoint.net